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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,843	05/19/2000	PIERRE NICAISE	35615.180	3718

7590 06/07/2005

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EXAMINER

KNEPPER, DAVID D

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/554,843	<b>Applicant(s)</b> NICAISE, PIERRE	
	<b>Examiner</b> David D. Knepper	<b>Art Unit</b> 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Applicant's correspondence filed on 28 Dec 2004 (Extension of Time and Response) has been received and considered. Claims 1-9, 11 and 12 are pending. Claim 10 has been canceled.

**Title**

2. The title is objected to because it is too long. The first two words "Process for" should be deleted since this terminology is more appropriate for claim language.

**IDS**

3. The IDS submitted 19 May 2000 was considered and initialed in 2003 but was not mentioned in an earlier Office Action so this comment is made to complete the record.

**Claims**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9 are rejected under 35 U.S.C. § 103 as being unpatentable over Gersho in view of Lozach (5,583,963).

As per claims 1 and 8 Gersho teaches “a sequence of acoustic units” with code vectors of his two-stage VQ (see page 452):

“units compared with library references” (his random vector X is quantized by  $Q_1$ , pages 451-452);

“differences between the units and the references are determined” (his differences shown in successive stages, figures 12.19 and 12.20);

“differences are encoded by secondary code words” (his figures 12.19 and 12.20 show that a successive difference is encoded by a secondary quantizer and the pair (fig. 12.19) of resulting codes are used to represent the coded input).

It is noted that the prior art does not use the term “acoustic units”. However, it is clear that the input vector X may represent speech (see pages 455-457 showing performance for speech examples) used in multistage VQ coding. Lozach shows a particular application of speech coding utilizing multistage vector quantization (see figures 10a and 10b). Therefore, it would have been obvious to one of ordinary skill in the art that the vector quantization of Gersho could apply to acoustic units representing speech.

Claims 2, 3: “Spectra of lines of frequencies, weighting coefficients normed with respect to the energy and integrated into the secondary code word” is taught by Gersho as standard tools used by those designing vector quantizers. See his weighting and norm calculations on pages 326 and 327 where he discusses commonly known distortion measures. See also page 509 where he teaches that line spectral frequencies (LSF - also known as line spectral pairs LSP) are common design choices among well-known types of LPC parameters.

Claim 4: Coding amplitude extremes is taught by Gersho’s high gain vectors, page 639.

Claim 5: Limiting the calculations of difference to a single average spectrum is considered obvious in view of Gersho's frame sample mean or average norm, page 639, bottom.

Claim 6: Limiting the frequency to 3 bands is obvious in view of Gersho's example of splitting vectors to represent the first 4 components, page 509. One of ordinary skill in the art knows that vowel sounds may be recognized using as few as 3 formant frequencies.

Claim 7: The use of a single coefficient for each band is typical for LPC, which typically employ the transmission of a vector of LPC parameters, page 509.

Claim 9 is obvious as the method for selecting and combining the coded elements for decoding (see Gersho, page 453, figure 12.21).

6. Claims 11 and 12 are rejected under 35 U.S.C. § 103 as being unpatentable over Gersho and Lozach further in view of Zehavi (5,581,575).

It is noted that Gersho and Lozach do not teach the combination including facsimile. However, Lozach suggests it in figure 2 with his auxiliary data input, Data Insertion System 19. Zehavi explicitly teaches the use of facsimile in column 5, line 28-29, 50-51 where he teaches that the combination is possible with any data transmitter.

#### **Remarks**

7. The applicant's arguments regarding the application of the prior art is not convincing. The previous rejections are repeated above and believe to be clear based on the broad claims and specification that the applicant has provided. Both the claims and the specification have been reviewed again but the applicant's analysis of the claims does not correspond to the breadth of

the disclosure relied upon to support them. Also, the applicant's analysis of the prior art, especially Gersho, is seriously flawed and the examiner is unable to find any reasonable interpretation of the claims that would overcome the prior art of record.

On page 5 of the applicant's remarks it is stated that in these "new pages of Gersho, there is nothing about the number of coded words, or codebooks, this being a feature (primary and secondary codes) recited in claim 1..."

This analysis is flawed for a number of reasons. First, the claims terminology using "primary code words" and "differences encoded by secondary code words" clearly read upon the common use of a two-stage VQ, which is clearly explained in chapter 12 of Gersho. Therefore, applicant's reference to the "new pages of Gersho" erroneously fails to consider pages 451-461. This egregious error especially ignores pages 451-452 which clearly teaches that it is well known to utilize a primary quantizer (Gersho's Q1) and a secondary quantizer (Gersho's Q2) where the secondary quantizer of Gersho is used to code the difference (Gersho's residual). Thus, the number of coded words or codebooks claimed is limited to two and not only are two code words taught by Gersho but even the limitation that the secondary code words represent differences is also taught as previously noted in the rejection above and the additional commentary provided now.

The applicant's comments on page 6 that "the random vector X... cannot constitute any reference...provided that codebooks are similar to acoustic units" directly contradicts Gersho and is wholly without merit. Gersho clearly teaches that his mathematical representations may represent speech (see page 326, 5<sup>th</sup> line from the bottom). Furthermore, the other prior art references which are also part of the rejections under 35 USC 103 also show that it is well known

to represent speech with codewords and the applicant has clearly ignored this evidence as well as that provided by Gersho.

The applicant's statement that "Lozach teaches the use of dictionaries (fig. 10), but they are not libraries as in claim 1" is misplaced since it is Gersho (see above) which is relied upon to teach the known relationship between libraries (dictionaries) as claimed. Contrary to the applicant's arguments, Lozach is relied upon to show that it is known to apply vector quantization techniques to speech units. Claim 1 does not limit the units to phonemes so the claims are broad enough to cover any representation of speech or speech parameters (NOTE: it is assumed that the applicant's term "pneonemes" is a misspelling of the well known term 'phonemes').

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Some correspondence may be submitted electronically. See the Office's Internet Web site <http://www.uspto.gov> for additional information.

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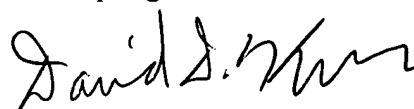
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Knepper whose telephone number is (571) 272-7607. The examiner can normally be reached on Monday-Thursday from 07:30 a.m.-6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

For the Group 2600 receptionist or customer service call (571) 272-2600.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by email at [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>.



David D. Knepper  
Primary Examiner

**Art Unit 2654**

May 25, 2005



approved  
DDR

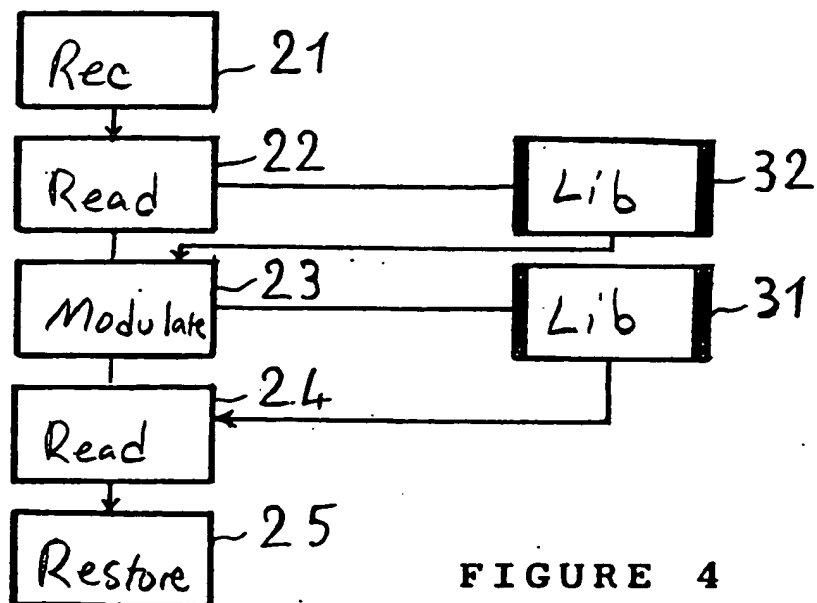
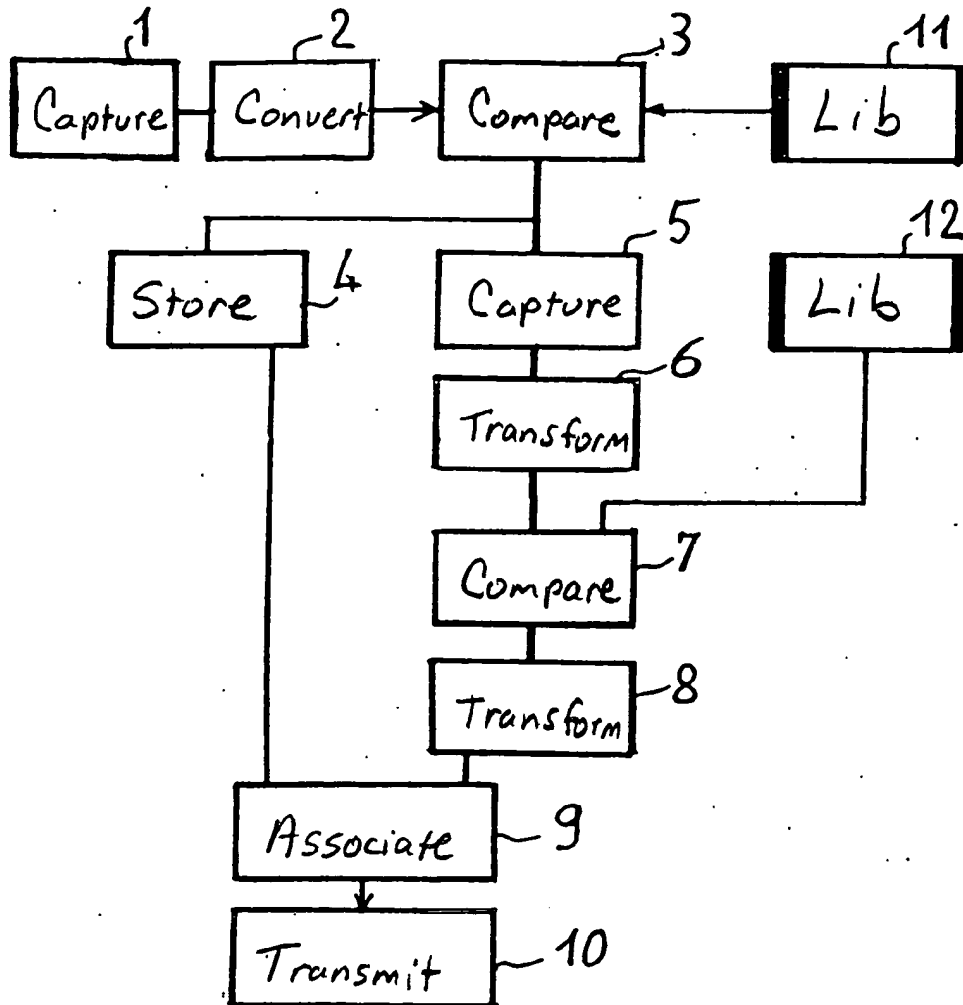


FIGURE 4

approved  
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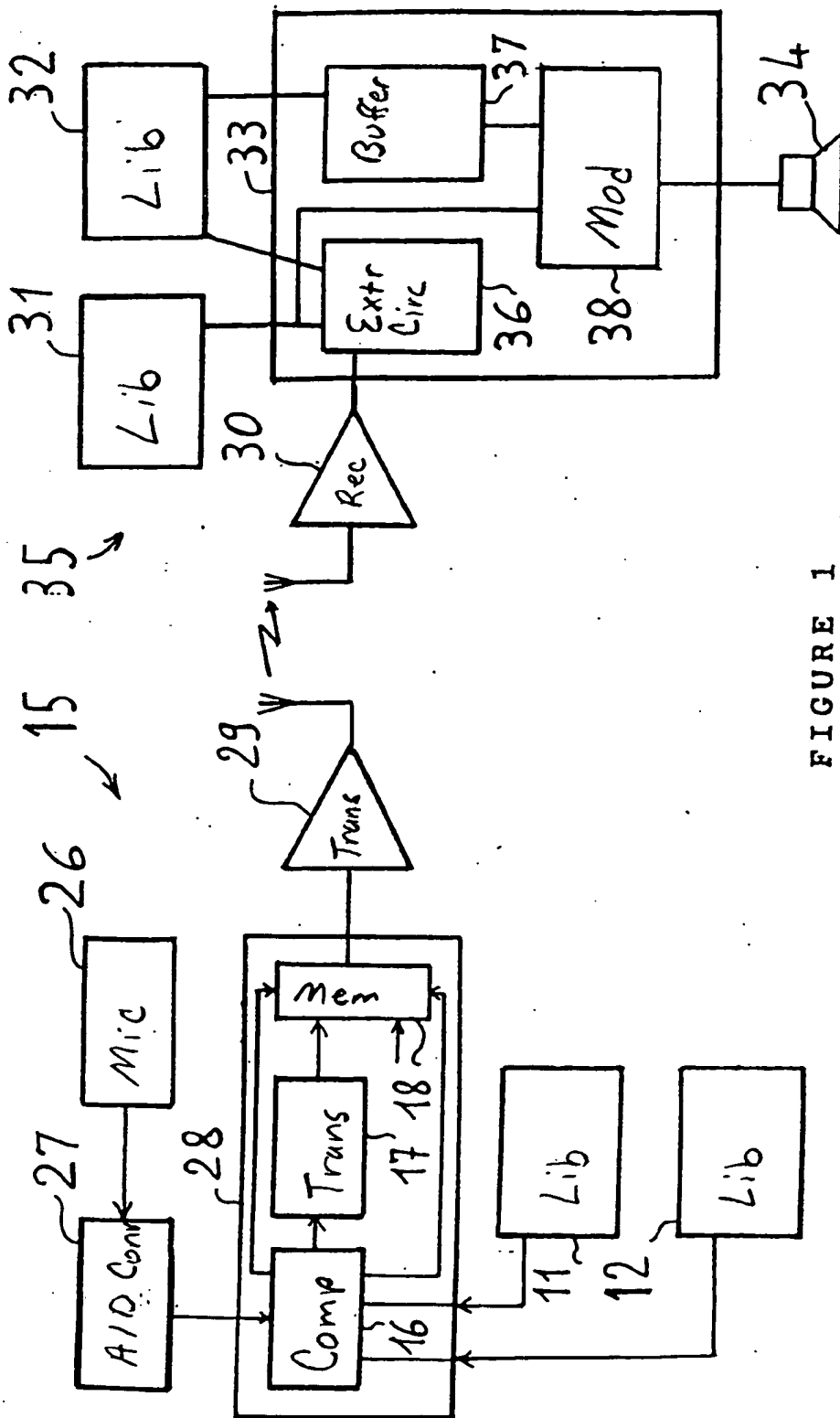


FIGURE 1